Atty. Docket No.: CME/03-001

IN THE CLAIMS:

1. (Amended) A pump for propelling liquid through a lumen of a flexible tube segment, the pump comprising:

a first tube-clamping member;

a first set of tube squeezing members;

a second tube-clamping member;

a second set of tube squeezing members, said members arranged in a direction from upstream to downstream;

a motor;

a motor control in operative connection with the motor, the motor control providing energy to the motor to drive the motor and receiving feedback from the motor of motor function, the motor control comprising a motor control protocol that controls the energy to the motor based upon the feedback received from the motor, the motor control protocol causing ~~a rapid~~ an impulse increase in energy provided to the motor if motor feedback indicates ~~an unusual~~ a stall load on the motor; and

a synchronizing device operably associated with the motor and said members, the synchronizing device operable to activate said members in a sequential order such that fluid in the tube is displaced in a downstream direction.

2. (Amended) The pump of claim 1 wherein the motor control protocol first causes a decrease in energy provided to the motor before causing the ~~rapid~~ impulse increase in energy.

3. (Amended) The pump of claim 2 wherein the energy is decreased to a minimum level and then impulse ~~rapidly~~ increased to a maximum level for a period of time.

Atty. Docket No.: CME/03-001

4. (Amended) The pump of claim 1 wherein the motor control protocol the motor control increases the energy supplied to the motor in a predetermined manner for a predetermined period of time, and if motor feedback indicates ~~an unusual~~ a stall load on the motor at the end of this period of time the motor control protocol causes an impulse ~~a rapid~~ increase in energy provided to the motor.

5. (Amended) The pump of claim 4 wherein the motor control protocol first causes a decrease in energy provided to the motor before causing the rapid increase in energy.

6. (Amended) The pump of claim 5 wherein the energy is decreased to a minimum level and then impulse ~~rapidly~~ increased to a maximum level for a period of time.

7. (Amended) The pump of claim 5 wherein the motor control protocol repeats the decrease in energy and subsequent impulse ~~rapid~~ increase in energy a predetermined number of times if motor feedback indicates continued abnormal function of the motor.

8. (Amended) The pump of claim 6 wherein the motor control protocol repeats the decrease in energy to the minimum level and subsequent impulse ~~rapid~~ increase in energy to the maximum level a predetermined number of times if motor feedback indicates continued abnormal function of the motor.

9. (Amended) A pump comprising a motor and a motor control in operative connection with the motor, the motor control providing energy to the motor to drive the motor and receiving feedback from the motor of motor function, the motor control comprising a motor control protocol that controls the energy to the motor based upon the feedback received from the motor, the motor control protocol causing a rapid increase in energy provided to the motor if motor feedback indicates ~~an unusual~~ a stall load on the motor, and the motor control protocol first causes a decrease in energy provided to the motor before causing the impulse increase in energy.

Atty. Docket No.: CME/03-001

10. (Canceled)

11. (Amended) The pump of claim 9 ~~10~~, wherein the energy is decrease to a minimum level and then impulse ~~rapidly~~ increases to a maximum level for a period of time.

12. (Amended) The pump of claim 9 wherein the motor control protocol of the motor control increases the energy supplied to the motor in a predetermined manner for a predetermined period of time, if motor feedback indicates a stall ~~an unusual~~ load on the motor at the end of this period of time the motor control protocol causes a rapid increase in energy provided to the motor.

13. (Canceled)

14. (Canceled)

15 (Amended) The pump of claim 10 ~~13~~ wherein the motor control protocol repeats the decrease in energy and subsequent impulse ~~rapid~~ increase in energy a predetermined number of times if motor feedback indicates continued abnormal function of the motor.

16. (Amended) The pump of claim 11 ~~14~~ wherein the motor control protocol repeats the decrease in energy to the minimum level and subsequent impulse ~~rapid~~ increase in energy to the maximum level a predetermined number of times if motor feedback indicates continued abnormal function of the motor.

17. (Withdrawn) A method of controlling a motor of a pump, comprising:

providing energy to the motor to drive the motor;

receiving feedback from the motor of motor function;

controlling the energy to the motor based upon the feedback received from the motor; and

rapidly increasing the energy provided to the motor if motor feedback indicates an unusual load on the motor.

18. (Withdrawn) The method of claim 17 wherein the energy provided to the motor is first decreased before being rapidly increased.

19. (Withdrawn) The method of claim 18 wherein the energy is decreased to a minimum level and then rapidly increased to a maximum level for a period of time.

20. (Withdrawn) The method of claim 17 wherein the energy supplied to the motor is increased in a predetermined manner for a predetermined period of time, if motor feedback indicates an unusual load on the motor at the end of this period of time the energy provided to the motor is then rapidly increased.

21. (Withdrawn) The method of claim 20 wherein energy provided to the motor is decreased before being rapidly increased.

22. (Withdrawn) The method of claim 21 wherein the energy is decreased to a minimum level and then rapidly increased to a maximum level for a period of time.

23. (Withdrawn) The method of claim 21 wherein after an initial decrease in energy provided to the motor and subsequent rapid increase in energy provided to the motor, a decrease in energy and subsequent rapid increase in energy is repeated a predetermined number of times if motor feedback indicates continued abnormal function of the motor.

24. (Withdrawn) The method of claim 21 wherein after an initial decrease in energy provided to the motor to the minimum level and subsequent rapid increase in energy provided to the motor to the maximum level, a decrease in energy to minimum level and subsequent rapid increase in energy to maximum level is repeated a predetermined number of times if motor feedback indicates continued abnormal function of the motor.

25. (Withdrawn) The method of claim 24 wherein the motor is operated in an MR environment.

26. (Withdrawn) The method of claim 25 wherein the abnormal function of the motor is a result of an MR magnetic field.

27. (Withdrawn) The method of claim 20 wherein energy provided to the motor is increased in steps of a preset increment of time during the predetermined period of time, and wherein the energy supplied to the motor is increased to its maximum level in a single step if motor feedback indicates an unusual load on the motor at the end of the predetermined period of time.

28. (Withdrawn) The method of claim 27 wherein energy provided to the motor is decreased before being increased.

29. (Withdrawn) The method of claim 28 wherein the energy is decreased to a minimum level and then increased to a maximum level in a single step.

30. (Withdrawn) The method of claim 28 wherein after an initial decrease in energy provided to the motor and subsequent increase in energy provided to the motor, a decrease in energy and subsequent increase in energy is repeated a predetermined number of times if motor feedback indicates continued abnormal function of the motor.

31. (Withdrawn) The method of claim 30 wherein the motor is operated in an MR environment.

32. (Withdrawn) The method of claim 31 wherein the abnormal function of the motor is a result of an MR magnetic field.